

What Is Claimed Is:

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1. An electroluminescent device comprising:
a substrate;
a lower electrode layer over the substrate, having a plurality of convex shapes in its surface;
an insulating layer over the lower electrode layer;
a light-emitting layer over the insulating layer;
an upper electrode layer over the light-emitting layer; and
a passivation layer over the upper electrode layer,
wherein the insulating layer, the light-emitting layer, and the upper electrode layer are formed in succession.
2. The electroluminescent device according to claim 1, wherein the lower electrode layer has a layered structure including a polysilicon layer and a metal layer.
3. The electroluminescent device according to claim 2, wherein the polysilicon layer has a plurality of convex shapes in its surface.
4. The electroluminescent device according to claim 2, wherein the metal layer includes at least one of Al and Ag.

5. The electroluminescent device according to claim 1, wherein the lower electrode layer has a layered structure including a tungsten layer and a metal layer.

6. The electroluminescent device according to claim 5, wherein the tungsten layer has a plurality of convex shapes in its surface.

7. The electroluminescent device according to claim 5, wherein the metal layer includes at least one of Al and Ag.

8. The electroluminescent device according to claim 1, wherein the insulating layer, the light-emitting layer, and the upper electrode layer have substantially the same surface profile as the lower electrode layer.

9. The electroluminescent device according to claim 1, wherein the lower electrode layer has a single layer structure of a metal layer.

10. The electroluminescent device according to claim 9, wherein the metal layer includes at least one of Al and Ag.

11. The electroluminescent device according to claim 1, wherein the insulating layer includes BaTiO_3 .

14. A method for manufacturing an electroluminescent device, the method comprising:

forming, over a substrate, a lower electrode layer having a plurality of convex shapes in its surface;

forming, over the lower electrode layer, an insulating layer, a light-emitting layer, and an upper electrode layer in succession so that the insulating layer, the light-emitting layer, and the upper electrode layer have substantially the same surface profile as the lower electrode layer; and forming a passivation layer over the upper electrode layer.

15. The method according to claim 14, wherein forming the lower electrode layer includes:

forming, over the substrate, a polysilicon layer having a plurality of convex shapes in its surface; and

forming, over the polysilicon layer, a metal layer having substantially the same surface profile as the polysilicon layer.

16. The method according to claim 15, wherein the polysilicon layer is formed by low pressure chemical vapor deposition (LPCVD) at a temperature between about 560°C and about 610°C.

17. The method according to claim 14, wherein forming the lower electrode layer includes:

forming, over the substrate, a tungsten layer having a plurality of convex shapes in its surface; and

forming, over the tungsten layer, a metal layer having substantially the same surface profile as the tungsten layer.

18. The method according to claim 17, wherein the tungsten layer is formed by chemical vapor deposition (CVD).

19. The method according to claim 14, wherein forming the lower electrode layer includes:

forming a metal layer over the substrate; and

etching a surface of the metal layer to form a plurality of convex shapes thereon.

20. The method according to claim 19, wherein the metal layer is formed by thermal deposition.

21. The method according to claim 19, wherein etching the surface of the metal layer includes performing at least one of wet etching and dry etching.

22. The method according to claim 14, wherein forming the insulating layer includes forming a BaTiO_3 based material.

23. The method according to claim 14, wherein forming the light-emitting layer includes performing at least one of electron beam deposition and sputtering.

24. The method according to claim 14, wherein forming the upper electrode layer includes;

forming an indium tin oxide (ITO) layer; and
patterning the indium thin oxide layer.

12-13	14-15	16-17	18-19	20-21	22-23	24-25	26-27	28-29	30-31	32-33	34-35	36-37	38-39	40-41	42-43	44-45	46-47	48-49	50-51	52-53	54-55	56-57	58-59	60-61	62-63	64-65	66-67	68-69	70-71	72-73	74-75	76-77	78-79	80-81	82-83	84-85	86-87	88-89	90-91	92-93	94-95	96-97	98-99	100-101	102-103	104-105	106-107	108-109	110-111	112-113	114-115	116-117	118-119	120-121	122-123	124-125	126-127	128-129	130-131	132-133	134-135	136-137	138-139	140-141	142-143	144-145	146-147	148-149	150-151	152-153	154-155	156-157	158-159	160-161	162-163	164-165	166-167	168-169	170-171	172-173	174-175	176-177	178-179	180-181	182-183	184-185	186-187	188-189	190-191	192-193	194-195	196-197	198-199	200-201	202-203	204-205	206-207	208-209	210-211	212-213	214-215	216-217	218-219	220-221	222-223	224-225	226-227	228-229	230-231	232-233	234-235	236-237	238-239	240-241	242-243	244-245	246-247	248-249	250-251	252-253	254-255	256-257	258-259	260-261	262-263	264-265	266-267	268-269	270-271	272-273	274-275	276-277	278-279	280-281	282-283	284-285	286-287	288-289	290-291	292-293	294-295	296-297	298-299	300-301	302-303	304-305	306-307	308-309	310-311	312-313	314-315	316-317	318-319	320-321	322-323	324-325	326-327	328-329	330-331	332-333	334-335	336-337	338-339	340-341	342-343	344-345	346-347	348-349	350-351	352-353	354-355	356-357	358-359	360-361	362-363	364-365	366-367	368-369	370-371	372-373	374-375	376-377	378-379	380-381	382-383	384-385	386-387	388-389	390-391	392-393	394-395	396-397	398-399	400-401	402-403	404-405	406-407	408-409	410-411	412-413	414-415	416-417	418-419	420-421	422-423	424-425	426-427	428-429	430-431	432-433	434-435	436-437	438-439	440-441	442-443	444-445	446-447	448-449	450-451	452-453	454-455	456-457	458-459	460-461	462-463	464-465	466-467	468-469	470-471	472-473	474-475	476-477	478-479	480-481	482-483	484-485	486-487	488-489	490-491	492-493	494-495	496-497	498-499	500-501	502-503	504-505	506-507	508-509	510-511	512-513	514-515	516-517	518-519	520-521	522-523	524-525	526-527	528-529	530-531	532-533	534-535	536-537	538-539	540-541	542-543	544-545	546-547	548-549	550-551	552-553	554-555	556-557	558-559	560-561	562-563	564-565	566-567	568-569	570-571	572-573	574-575	576-577	578-579	580-581	582-583	584-585	586-587	588-589	590-591	592-593	594-595	596-597	598-599	600-601	602-603	604-605	606-607	608-609	610-611	612-613	614-615	616-617	618-619	620-621	622-623	624-625	626-627	628-629	630-631	632-633	634-635	636-637	638-639	640-641	642-643	644-645	646-647	648-649	650-651	652-653	654-655	656-657	658-659	660-661	662-663	664-665	666-667	668-669	670-671	672-673	674-675	676-677	678-679	680-681	682-683	684-685	686-687	688-689	690-691	692-693	694-695	696-697	698-699	700-701	702-703	704-705	706-707
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25. An electroluminescent device comprising:

a substrate;

a lower electrode layer over the substrate, having an uneven surface profile;

an insulating layer over the lower electrode layer, having an uneven surface profile substantially corresponding to the uneven surface profile of the lower electrode layer;

a light-emitting layer over the insulating layer, having an uneven surface profile substantially corresponding to the uneven surface profile of the insulating layer; and

an upper electrode layer over the light-emitting layer, having an uneven surface profile substantially corresponding to the uneven surface profile of the light-emitting layer.

26. The electroluminescent device according to claim 1, wherein the uneven surface profile of the lower electrode has a plurality of convex shapes each of which is substantially hemispheric.